REMARKS

Reconsideration and further examination of the subject patent application in light of the present Amendment and Remarks is respectfully requested.

Claims 1, 2, 6-11, 14, 16, 25 and 27-29 are pending in this application. Claims 1, 2, 6-11, 14, 16, 25 and 27-29 stand rejected.

Rejections Under 35 U.S.C. §112

Claims 11, 14 and 16 stand rejected under 35 U.S.C. §112, second paragraph, for use of the phrase "a microphone from spaced apart location." In response, the phrase has been corrected. As such, the rejections are improper and should be withdrawn.

Rejections under 35 U.S.C. §103

Claims 11 and 14 stands rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 5,931,233 to La Bonte et al. in view of U.S. Pat. No. 2,966,209 to Pegrum and U.S. Pat. No. 5,839,109 to Iwamida. Applicant respectfully traverses these rejections.

In response, independent claim 11 has been clarified by being further directed to the step of "automatically analyzing the sensed human audible sounds by comparing the sensed human audible sounds with a plurality of stored signatures of a fire where each stored signature identifies a different type of fire." The plurality of stored signatures where each stored signature identifies a different type of fire is discussed in paragraph [0015] of the specification.

Independent claim 11 has also been clarified by being further directed to the step of

"matching the sensed human audible sounds from at least one of the respective microphones with one of the plurality of stored signatures." The matching of the human audible sounds with the stored signatures is discussed in paragraph [0018] of the specification.

Claim 11 is now clearly differentiated over La Bonte et al., Pegrum and Iwamida. Claim 11 is differentiated over La Bonte et al., Pegrum and Iwamida because none of the references (or the combination) provide any method step or apparatus for "matching the sensed human audible sounds from at least one of the respective microphones with one of the plurality of stored signatures."

In this regard, La Bonte et al. merely detects wildfires through the use of a number of sensors 185. The "sensors 185 include a parabolic microphone sensor 186 for detecting the sounds of hot and cold air molecules colliding during a wildfire 106" (La Bonte et al., col. 11, lines 62-64). As those of skill in the art would understand, the collision of hot and cold molecules would not produce human audible sounds. Only a parabolic microphone sensor 186 and associated circuitry could be used to detect such collisions.

As those of skill in the art would also understand, the collision of a hot and cold molecule would be an instantaneous event that would produce only a single, relatively high frequency. While hot and cold molecules of different molecular weights (or different temperatures) would produce different frequencies, those different frequencies would occur only within a slotted range of frequencies.

In contrast, the claimed invention is directed to "a plurality of stored signatures." As those of skill in the art would understand, the signature of a fire would be defined by the

interaction between a naturally aspirating fire and the burned material. For example, a person with a fireplace would understand that different types of wood burned in a fireplace produce a different crackling sound based upon the type of wood used. While the crackling sound would be abrupt, it would be of a relatively low frequency depending upon the burned material. Similarly, the plurality of fire signatures of the claimed invention would be tailored to the application, but in all cases, would be directed to the fire risk of burning material. These would be understood to be completely different than the slotted set of high frequencies that would be produced by air molecules colliding during a wildfire.

Similarly, Pegrum is directed to a noise level of "fluent fuel burners, e.g., oil, pulverized coal, or gas burners" (Pegrum, col. 1, lines 15-16) operating with forced aspiration. The forced aspiration functions to atomize or otherwise separate the burned fuel into smaller particles for better combustion. In this regard, "the atomization is effected by pressure of the liquid or by the use of atomizing air or steam, is accompanied by a characteristic noise or roaring sound" (Pegrum, col. 1, lines 45-47.

Moreover, the noise level may be dependent upon the combustion rate. For example, in the case of "flames from gas burners and pulverized coal burners operating with supplies of combustion air under pressure ... the noise level of the characteristic sound depends upon the combustion rate" (Pegrum, col. 1, lines 49-52).

Under Pegrum, the combustion rate and fuel define different operating conditions. The "noises at the microphone associated with different conditions are subject to amplitude-frequency analysis ... designed to suppress wholly or partially all frequencies outside a band is which ...

the characteristic noise or roaring sound of the flame is present" (Pegrum, col. 3, lines 46-52).

After amplitude-frequency analysis, the signal from the microphone 23 is applied to a rectifier 41 and the rectified signal is compared with a reference signal from a measuring device 48 within a comparator 42. The measuring "device 48 which supplies to the comparator 42, in opposition to the signal from the rectifier 41, a D.C. signal whose value ... varies with the oil supply rate according to the curve C of FIG. 2" (Pegrum, col. 4, lines 51-60).

As such, Pegrum relies upon an amplitude-frequency processed signal from a microphone 23 that is compared with a reference that is dependent upon a combustion rate. This is clearly different than the step of (or apparatus for) "matching the human audible sound from at least one of the respective microphones with one of the plurality of stored signatures" as under claim 11. For example, Pegrum could only have one combustion rate at any one time against which the output of the Pegrum microphone 23 could be compared.

Iwamida is simply directed to speech recognition. This, by itself, demonstrates that Iwamida could not provide any basis for the use of a "plurality of fire detection signatures."

Since La Bonte et al., Pegrum and Iwamida and the combination of La Bonte et al., Pegrum and Iwamida do not use a "plurality of fire detection signatures" or any process for "matching the human audible sound with at least one of the plurality of fire detection signatures", the combination does not teach or suggest each and every feature and limitation of the claimed invention. Since the combination does not teach or suggest each and every feature and limitation of the claimed invention, the rejections are now improper and should be withdrawn.

Claims 1, 2, 6-11, 14, 16, 25 and 27-29 have been rejected under 35 U.S.C. §103(a) as

being obvious over U.S. Pat. No. 4,709,330 to Yokoi et al. in view of U.S. Pat. No. 2,966,209 to Pegrum and U.S. Pat. No. 5,839,109 to Iwamida. Applicant respectfully traverses these rejections.

In response, independent claim 1 has been clarified by being further directed to the step of "comparing the sensed human audible sounds with a plurality of stored signatures of a fire where each stored signature identifies a different type of fire." Independent claims 11 and 25 have been similarly clarified. The plurality of stored signatures where each stored signature identifies a different type of fire is discussed in paragraph [0015] of the specification.

Independent claim 1 has also been clarified by being further directed to the step of "matching the sensed human audible sounds from at least one of the respective microphones with one of the plurality of stored signatures." Independent claims 11 and 25 have been similarly clarified. The matching of the human audible sounds with the stored signatures is discussed in paragraph [0018] of the specification.

Claims 1, 2, 6-11, 14, 16, 25 and 27-29 are now clearly differentiated over the combination of Yokoi et al., Pegrum and Iwamida. For example, Yokoi et al. fails to provide any teaching or suggestion of sounds emitted by a fire. Similarly, Pegrum is directed to comparing microphone sounds with combustion rate and Iwamida to voice recognition.

Since Yokoi et al., Pegrum and Iwamida and the combination of Yokoi et al., Pegrum and Iwamida fail to provide any teaching of the step of (or apparatus for) "matching the human audible sound with at least one of the plurality of fire detection signatures", the combination fails to teach or suggest each and every claim limitation. Since the combination fails to teach or

suggest each and every claim limitation, the rejections are improper and should be withdrawn.

Closing Remarks

For the foregoing reasons, applicant submits that the subject application is in condition

for allowance and earnestly solicits an early Notice of Allowance. Should the Primary Examiner

be of the opinion that a telephone conference would expedite prosecution of the subject

application, the Primary Examiner is respectfully requested to call the undersigned at the below-

listed number.

The Commissioner is hereby authorized to charge any additional fee which may be

required for this application under 37 C.F.R. §§ 1.16-1.18, including but not limited to any late

fee under 37 C.F.R. §1.136 or the issue fee, or credit any overpayment, to Deposit Account No.

23-0920. Should no proper amount be enclosed herewith, as by a check being in the wrong

amount, unsigned, post-dated, otherwise improper or informal, or even entirely missing, the

Appl. No. 10/716,157

Commissioner is authorized to charge the unpaid amount to Deposit Account No. 23-0920. A

duplicate copy of this sheet(s) is enclosed.

Respectfully submitted,

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